

## HYBRID JAYS IN COLORADO

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PITELKA, Selander, and del Toro (1956) described a hybrid between the White-tipped Brown Jay (*Psilorhinus mexicanus*) and the Magpie Jay (*Calocitta formosa*) observed and collected in western Chiapas, Mexico. To our knowledge, no other hybrid jay has been reported in North America (Cockrum, 1952); hence the recent appearance in Boulder, Colorado, of hybrid individuals identifiable as *Cyanocitta cristata* × *C. stelleri* or as backcrosses between such a hybrid and a Steller's Jay is an unusual event.

The first hybrid to be seen appeared on 3 September 1969 at a feeder at the residence of the junior author in Boulder, approximately one mile east of the lower edge of the ponderosa pine forests covering the hogbacks immediately west of the city. On 30 September 1969, at a bird-banding station about two blocks distant, the hybrid was captured, measured, banded, photographed, and released by Professor and Mrs. John Hough. However, by 2 October it was clear that there were four hybrid individuals visiting the Wheat's feeder. The banded bird was not seen after 7 October, but the others used the feeder regularly throughout the winter and the 1970 breeding season in the company of Steller's Jays.

### DESCRIPTION OF THE HYBRIDS

The hybrid individuals appeared intermediate between the two parental species in body size, length of bill, length of crest, and color (Fig. 1). In each case, the forehead was deep blue with a heavy black line extending over the top of the bill and with two thin tapering white lines extending from the bill to the base of the crest which resembled, in attitude and shape, that of a young Steller's Jay. The deep blue crest was streaked with light blue. Extensive white patches, strongly outlined in black, appeared above and below the eyes. The lores were black and a heavy black line extended back through the eyes. The chin and throat were bluish white, and a heavy black nuchal band encircled the neck. The underparts were blue becoming lighter posteriorly, while the back and rump were medium blue with a lavender cast. Wings and tail were blue. The secondaries were barred with black; the greater wing coverts were barred and variably white-tipped. The rectrices were likewise barred with black, and all but the inner central feathers were conspicuously white-tipped; however, the white areas were seen only when the tail was spread. Careful scrutiny of the birds during the winter months revealed that the variations in the amount of white in the wings provided color patterns sufficiently different to allow observers to distinguish one bird from another.

### BEHAVIOR OF THE HYBRIDS

In general, the behavior of the hybrids was indistinguishable from that of the Steller's Jays visiting the feeder. Using criteria similar to those em-

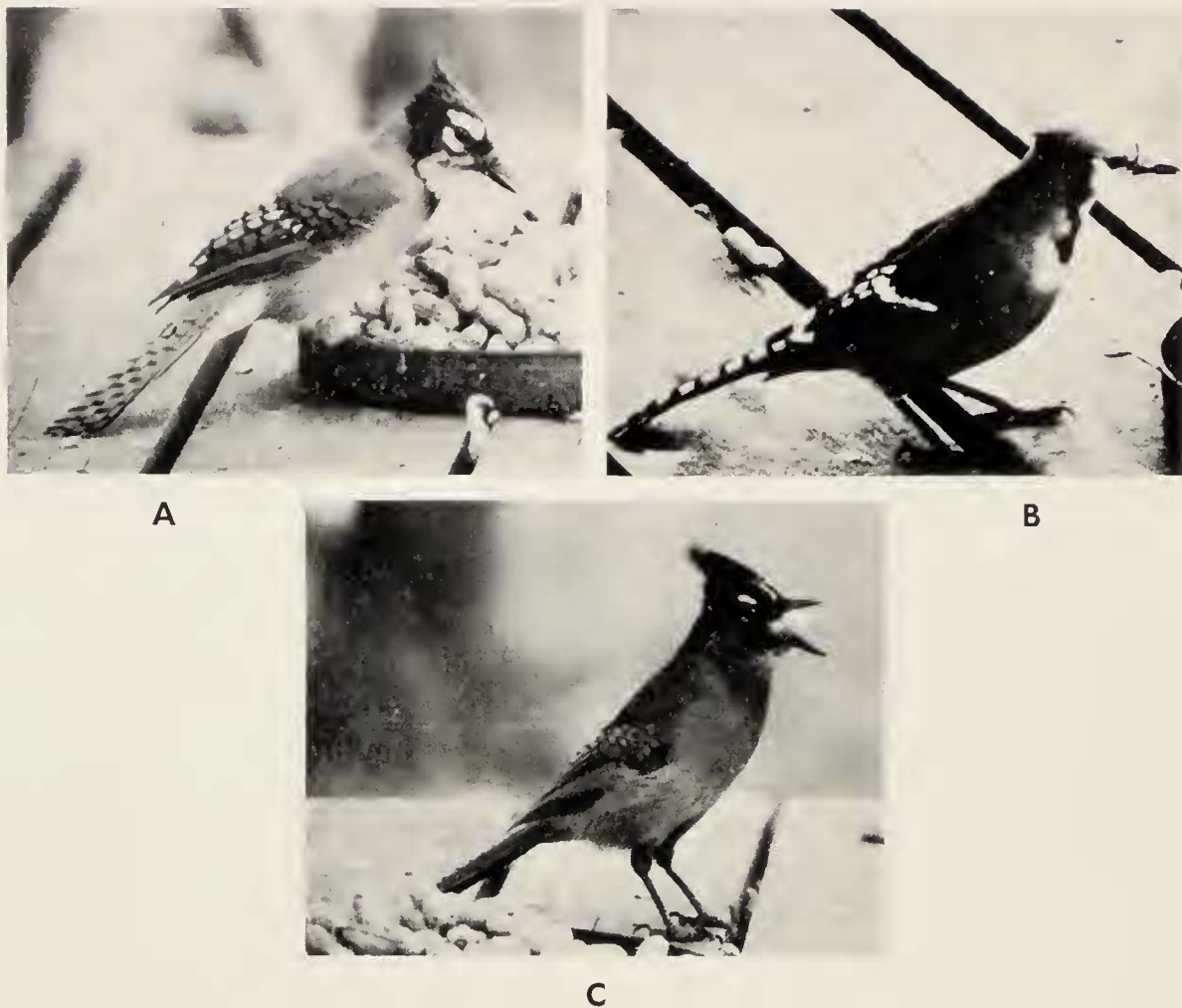


FIG. 1. A. Hybrid Jay. B. Blue Jay. C. Steller's Jay.

ployed by Brown (1963) in his study of social organization of Steller's Jays, we judged the hybrids to be socially dominant over both parental species. Although they were seldom overtly aggressive toward the Steller's Jays, the hybrids consistently supplanted the latter at the peanut dispenser. They were more actively aggressive toward Blue Jays; on one occasion, in October, a hybrid drove a Blue Jay out of the yard.

#### PROBABLE BACKCROSSES

Courtship among the Steller's Jays began in February 1970. Occasionally, hybrid birds were seen participating in courtship activities, but until 6 August 1970 we were unable to obtain evidence that any of them had obtained mates and nested. On this date, three young jays, beginning post-juvinal molt, appeared with an adult Steller's Jay at the feeding station. The four were obviously a family group. Unlike young Steller's Jays which have sooty heads and crests unmarked with white, these new birds possessed gray-blue heads with a faint blackish band across the throat. Backs, rumps, and under-

parts were also gray-blue. A few of their greater wing coverts were barely tipped with white; variable amounts of white showed in their secondaries. All but their central rectrices were tipped with white but less extensively so than in the hybrids of the previous season. By mid-August these birds were showing large, crescent-shaped patches of white above their eyes, but the feathers of their chins and throats were deep blue with no suggestion of the nuchal band clearly evident in the old hybrids. Because no Blue Jays had been seen in the neighborhood since early June, we concluded that these young birds were offspring of a backcross between one of the original hybrids and a Steller's Jay.

#### VOCALIZATIONS

Initial assessment of the vocalizations of the Blue Jays, Steller's Jays, and hybrids at the feeding station indicated that the latter produced calls approximating those of both parental species and an additional unique call. We, therefore, proceeded to record and compare some of the calls by means of sound spectrograms. The Steller's Jays, visiting the feeding station regularly and in relatively large number throughout the year, produced six or seven distinct calls in addition to their quiet conversational notes. In contrast, the Blue Jays, infrequently visiting the feeder in the early fall, made only their typical *jay* alarm calls and a *peedly-ink* call which may be the one verbalized by Hardy (1961) as *wheedle-eee* expressing anxiety or suppressed excitement. At one time or another, the hybrids were heard producing all of the vocalizations of the Steller's Jays but with slight tonal differences verified by the sonagrams of these calls. Surprisingly, the hybrids used Blue Jay calls more frequently than Steller's calls, although, from October to April, as far as we could ascertain, they had no contact with Blue Jays; none were in the neighborhood. Likewise, the backcross hybrids used the Steller's rasping alarm or assembly calls but, more frequently, the Blue Jay *jay* and *peedly-ink* calls.

#### DISCUSSION

The Steller's Jay is a common resident throughout the mountain forests of Colorado. Its greatest abundance is in the ponderosa pine zone of the lower montane forest climax (Bailey and Niedrach, 1965) and probably has been so for a very long time. In contrast, the Blue Jay is a relative newcomer along the foothills of the Rockies in Colorado. Beidleman (1951) suggested that the species was uncommon in the state during the first half of this century. The birds began to appear regularly in Boulder and nearby communities in small numbers in the mid-fifties and in increasing numbers in the 1960's. In 1968 a pair of Blue Jays nested in the University Hill section of

Boulder thus, for the first time in this area, bringing breeding Blue Jays in close proximity to nesting Steller's Jays. Strange-looking jays, possibly hybrids, have been reported from at least one other community along the foothills, but the report has not been verified.

## LITERATURE CITED

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